



A Complete review on Detection, Prevention and Treatment of Pyorrhea a major problem in old age people

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Article History	Abstract:
<p>Received: 6 Jan 2024 Revised: 30 Jan 2024 Accepted: 10 Feb 2024</p>	<p>Pyorrhea an infectious diseases that can be damage the gums and destroys the jaw bones. Pyorrhea is mainly seen in people over 35 years of age that causes tooth loss over time. The current study is clear that gingival bleeding and visible inflammation are the first signs of gingivitis. Continuous bleeding gums could be caused by plaque formation on the teeth, which is connected to a number of systemic disorders in older persons with periodontal diseases. The most common causes of bleeding gum include roughly brushing or wearing fake teeth that do not fit properly and formation of plaque at the gum line, which leads to inflammation. A clinical trial was performed in order to evaluate the effectiveness of mouth wash with Promegranate and Chamomile plant extract, against Chlorhexidine 0.12% in the gingiva bleeding condition. Other treatment is give the prescription of vitamin supplement for bleeding gum. It can be an indication loe ,parfit and Massler depend on a decision about oral color, texture, and contour to determine the level of inflammation in the gums. The aim of this review is to examine the gingival response to dental plaque in gingivitis patients without gum damage, with either a low or high bleeding or plaque ratio. The aim of this article is to aware people to not take this disease lightly and to take proper treatment.</p>
<p>CC License CC-BY-NC-SA 4.0</p>	<p>Keywords: <i>Pyorrhea, periodontitis, bleeding gum, chlorhexidine.</i></p>

Introduction: -

Gum diseases maybe develop if you have bleeding gums, it may be sign of dangerous condition.¹Most of disease is caused by chronic marginal gingivitis, which is usually treated with simple periodontal therapy and instruction on good oral hygiene. Clinical sample data indicates that older people have more cases of oral diseases and that The risk of oral health issues considerably increase in older persons with bleeding gums.² Periodontitis and gingivitis are inflammatory conditions that only affect the protective periodontal tissue (marginal and connected gingiva) and are characterized by inflammation, swelling, and bleeding gingiva.³⁻⁴ The goal of the dental profession is to objectively diagnose gingival and periodontal pathology so that therapy decisions can be made more rationally and clinically.⁵⁻¹⁰

In samples collected from the gingival and apical regions of periodontal gaps, Tanner and Socransky investigated the association between bacteria and the clinical condition.¹¹the causes of bleeding gum include

roughly brushing or wearing fake teeth that do not fit properly and formation of plaque at the gum line.¹²The purpose of the present study was to determine if the observation of a higher tendency for gingival bleeding was caused by the chemical agent directly or whether it was related to the absence of mechanical home care techniques when using chlorhexidine mouthrinses.

Identification of pyorrhea or periodontitis

Pyorrhea is an infectious disease that can damage our gums and jawbones. A proper oral examination should include a measurement of gingival bleeding tendency. Periodontal disorders come in many different types, and gingival bleeding is not a typical symptom of any particular type of the disease. Periodontal diseases such as acute hemorrhaging ulcerative gingivitis, juvenile periodontitis, adult periodontitis, refractory periodontitis, and gingival bleeding are all caused by gingival bleeding. Pyorrhea is mainly seen in people of 35 year age. They cause tooth loss.¹³ Most people who eat mostly soft and cooked food have some form of gingival inflammation, and their gums may bleed.¹⁴ Some of the underlying systemic disorders that may contribute to the gingival disorder include scurvy, pellagra, diabetes, leukemia, agranulocytosis, hemophilia, thrombocytopenic purpura, pregnancy, allergy, lead, bismuth, or mercury poisoning, and many debilitating diseases.¹⁵ This will result in more bleeding and a more advanced case of the gum and jaw bone disease known as periodontitis. There are numerous factors that might cause bleeding gums, including: Brushing too vigorously, Pregnancy-related hormonal changes, wearing dentures or other dental appliances, incorrect flossing, An infection, which may occur in the gums or a tooth, One form of blood cancer is leukemia, Scurvy, a lack of vitamin C, Low vitamin K levels.¹²

An inflammatory lesion can be detected by gingival bleeding, and bleeding and color changes have been used to establish indices that are the most accurate predictors of early gingival pathology.¹⁶⁻¹⁹ According to recent studies, bleeding looks to be a measure that can be used to identify histopathologic, clinical, and bacteriologic changes currently associated with periodontal disease.^{20-26,11} When they examined gingival samples taken from bleeding areas, they discovered that a zone of inflammation had replaced 45% of the connective tissue next to the junctional epithelium. While lymphocytes were more common, plasma cells made about 65% of the inflammatory spread connected to bleeding.²⁷ The epithelium lining the soft tissue wall of a periodontal cavity can develop microulcerations, which lead to bleeding.

Periodontal disorders come in many different types, and gingival bleeding is not a typical symptom of any particular type of the disease. According to patient surveys, 70% of respondents are aware that bleeding is an indication of gum infections. As a result, public awareness campaigns have included themes like "Brush away bleeding" and "Healthy gums don't bleed."²⁸ Bleeding is not just a clear, objective indicator of early gingivitis and several other types of periodontal disorders, but it also comes before additional symptoms like discoloration and swelling. There are a number of clinical criteria that are employed in the diagnosis of periodontal disorders. In order to promote widespread usage, each one should ideally be: 1) objective and impervious to subjective interpretation; 2) affordable; 3) quick to complete; and 4) simple for physicians to utilize.²⁹ A toothpaste and mouthwash in a combination have use for anti-inflammatory parameters.³⁰ Natural substances are essential for preventing oral bacterial growth, attachment and infection due to an increase in bacterial resistance to antibiotics currently used in dental care.

Findings:-

A 77-year-old patient came to the dental office for treatment of his bleeding gum. When the bleeding was first observed, it had been continuous for 12 to 13 hours all into the evening. The patient's pillow had huge quantities of blood on it that morning, and there was dry blood near the lip commissures. He had no history of blood dyscrasias, was generally healthy clinically, and was not taking any drugs that would have affected his bleeding indices. A history of moderate idiopathic hypertension occurred. He had undergone minor oral surgery a year previously to remove a big odontogenic cyst from the right jaw that spread from the area above the roots of tooth 15 to the roots of tooth 17. Teeth 16 and 17 were removed during this procedure.

A partial denture was made to replace these missing teeth once the area healed without evidence of return. The patient had an important blood clot develop as a result of the patient's small gingival bleeding around teeth 14 and 15 when they were placed. This resulted in an in-stages, continuous leaking that came through the interdental gingivae, totally covering the capped surfaces of teeth 14 and 15. A both examination of the area showed no evident abnormalities of the hard tissues. Both teeth were healthy and neither one was very sensitive to

pressure. A 3–4 mm deep cavity was discovered by periodontal probing around both teeth. After determining that the problem was likely an acute periodontal infection, the area was carefully root-planed and cleaned. The patient was told to rinse with warm salt water and was referred for an orthopantomograph (OPG) radiograph. By the time the patient left the procedure, this area was no longer bleeding.

The patient returned to the surgery 9 days later with a similar case of gingival bleeding that had started 12 hours ago. The FBE (Full Blood Examination), which includes bleeding time and coagulation index, was quickly asked for the patient. The results showed a little neutropenia, a mild anemia, but evidence of thrombocytopenia. The study of the film indicated the presence of structures found in some the cells. An expert haematologist was consulted regarding the results, and acute myeloblastic leukemia was identified.³¹ The type of penetration present has been connected to the activity of periodontal disease, and the discovery of plasma cells was taken as a sign of an active and developing lesion.

Multiple bacteria species may come together to form oral biofilms (dental plaque), which may attach to enamel and oral soft tissues.⁵² They are typical of the oral micro flora and consist of more than 700 known species of oral microorganisms bound together inside an exopolymeric matrix. Dental caries and periodontitis often come on by uncontrolled oral biofilm production, which upsets the balance of helpful and opposing relationships between bacterial populations.⁵³ When compared to planktonic bacteria, oral biofilms grow more slowly and tend to be far more virulent, making them more immune to host responses and more resistant to antibiotics. Therefore, eliminating and avoiding tooth plaque accumulation is essential in defending against periodontal and dental conditions.

According to clinical trials, brushing may not be totally successful in avoiding plaque buildup.⁵⁴ This is caused by improper brushing technique, or a failure to completely remove plaque from all surfaces in the usual brushing intervals set up by patients.⁵⁵ Additionally, it is believed that the antimicrobial compounds in dentifrices are unable to properly reach parts of the oral cavity that are difficult to reach, leading to an accumulation of bacteria that live in biofilms in the interproximal and interdental spaces. Essential oils (EOs), cetylpyridinium chloride (CPC), and chlorhexidine (CHX)-containing mouthwashes have been shown to be useful in preventing accumulation of plaque and gingivitis.⁵⁶

Because essential oils are hydrophobic, they can break bacterial cell membranes and stop their enzymatic activity.⁵⁷ When added to a mechanical oral hygiene routine, essential oil mouthrinses provide an advantage over brushing and flossing alone or when combined with the use of a control non-essential oil mouthrinse in terms of reducing plaque and gingivitis.^{58,56} The anti-biofilm activity of these antimicrobial drugs within the complex structure of oral biofilms can be directly observed using scanning electron microscopy (SEM) and confocal laser scanning microscopy (CLSM).⁵⁹

The antiplaque and antigingivitis properties of LISTERINE® Antiseptic, a mouthrinse containing a set mixture of essential oils, have been extensively studied in numerous clinical trials.⁵⁶ According to their research, bleeding on to determine may be a faster and better indicator of a health deviation than visual indicators. Gingival measures should also be used with care because they just measure the health of the soft tissue and may or may not be proportionally or directly related to underlying periodontal disease.³² The U.S. Food and Drug Administration (FDA) has also designated LISTERINE Antiseptic as Category I, safe, and useful for use against plaque and gingivitis.⁶⁰

Detection of periodontitis:-

Gingival measures should also be used with care because they just measure the health of the soft tissue and may or may not be proportionally or directly related to underlying periodontal disease. Due to the simplistically supported belief that gingivitis results in destructive periodontitis, prevalence data showed a decrease in gingivitis beginning at the age of 13 and an increase in periodontitis as a result.^{33,7} This test examined the quantity of papillary (P), marginal (M), and attached (A) gingiva in trying to approximate the DMF index for cavities. Factors affected by the presence or absence of redness, swelling, or changes to the gingiva texture. The significance of bleeding upon probing in the diagnosis of periodontal disease is examined in relation to the following concepts that follows: (1) related histopathologic changes, (2) connected bacterial populations, (3) gingival crevicular fluid, (4) connection to visual inflammation, (5) healing parameter, and (6) probing-related restriction on bleeding evaluations. This early diagnosis of bleeding runs opposite to Løe's study, which found that gingivitis symptoms started appearing up 10 to 15 days after dental hygiene stopped.⁵⁶

The progressive stages include gingival inflammation (codes 0, 1, and 2), pocket formation with subsequent alveolar bone loss (code 6), loss of dental function (code 8), and ultimately loss of the tooth itself. Many of the features of the RamQord (1959) periodontal destruction index (PDI) are similar, and it similarly wants to record the total impact of disease on the tooth's attachment system. This is done by taking account of the location of the periodontal pocket's base in relation to an attraction, the junction of the cement and the enamel. As a result, codes 1, 2, and 3 denote gingivitis, whereas codes 4, 5, and 6 denote attachment losses of greater than or equal to six millimeters.⁷

Gingivitis and bleeding:-

A variety of techniques have been used to measure gingival inflammation, the most of which were based on the classic clinical indicators of inflammation, including redness and swelling, as well as the formation of an inflammatory fluid.³⁴ The ability of the gingivae to bleed has been represented in several recent developments of gingival indices as an important factor.²⁹ For the purpose of trying to measure the intensity of bleeding after a specific action, like mild examination, an oral bleeding index was developed with a focus on the fact that bleeding was a common symptom in early gingivitis.¹⁸ Dental tape placed at the base of a gap as part of oral care measures and, more recently, the use of interdental "woodsticks" have been other stimuli given to the gingivae.³⁵ Gingival samples' morphometric study supports the theory that gingivitis can be identified by clinical signs, such as the color and oedema of the gingivae and bleeding after probing.³⁶

Prevention of periodontitis:

Effective oral hygiene practices should be used every day to maintain gingival health.³⁷ The most popular method of preventing plaque growth is mechanical plaque removal using a toothbrush and dentifrice.³⁸ Dentifrices are said to have five basic functions: reducing plaque buildup, protecting teeth from caries, eliminating stains, removing food particles, and cooling the mouth.³⁹ To deal with the disadvantages of mechanical, patient-related plaque removal, the use of chemical agents with anti-plaque and/or anti-inflammatory abilities was also suggested.⁴⁰ Plaque removal during toothbrushing is the consequence of the interaction of various processes, including: 1) Patient-related factors, such as toothbrush action, brushing force, and motivation; 2) Physical/Mechanical Properties of the Toothbrush (Brush Head Design, Bristle Geometry, and Bristle Stiffness);⁴¹ and 3) Dentifrice with its various Ingredients (Abrasives, Detergents, Emulsifiers, and Preservatives).

The majority of data indicating how effectively dentifrices work to reduce plaque comes from long-term trials in which one dentifrice was used in actual brushing situations (home use studies with unsupervised brushing) and usually examined with a control dentifrice.⁴² For instance, one study⁴³ found no difference between brushing with or without a toothpaste, another found more plaque removal when no toothpaste was used, and two other studies⁴⁴ found more plaque removal when no toothpaste was used.⁴⁵ Brushing your teeth twice a day is suggested widely and is essential for preventing periodontal disorders. In order to prevent microbiological plaque from building up on teeth and gingivae, the toothbrush is well-designed to remove plaque from the facial, lingual, and occlusal tooth surfaces. Although the majority of people wash their teeth with a toothbrush and toothpaste that contains fluoride nowadays, most people do not clean their teeth well enough to avoid plaque buildup.⁴⁶

Treatment of periodontitis :-

The goal of this treatment is to reduce the risk of developing periodontal disease. This stage is often carried out using scraping and root planing (SRP) per side or sextant, with a one- to two-week interval in between sessions. Due to the limitations of mechanical oral hygiene techniques, chemical control of dental biofilm serves as a support by lowering the number of pathogenic microorganisms in the oral cavity and helping in the prevention and treatment of periodontal diseases through the use of antimicrobial agents in mouthwash.⁴⁷ As a highly effective antibacterial agent used in the treatment and prevention of gingivitis, chlorhexidine is frequently used as a reference in performance testing studies and regarded to be the most powerful chemical attack. Although it can be used in various formulae, it can be found in Brazil in quantities of 0.12% and 0.20%. However, it has local side effects when used for an extended length of time, such as coloring of the tongue, tooth and restorations discoloration, oral scaling and sensitivity, and allergic reactions.⁴⁸

Pomegranate, or *Punica granatum* Linn. species, is a shrub in the Lythraceae family. Its parts are used medicinally for a variety of purposes and have various active constituents and therapeutic applications. It is

regarded as a great potential plant for preventing and treating various diseases because of its antioxidant, hypoglycemic, cholesterol-lowering, antiviral, antiparasitic, antifungal, and antidiarrheal properties, as well as its ability to prevent cancer, promote cell differentiation, increase estrogen levels, and even act as an antimicrobial (against *Staphylococcus aureus* and *Salmonella typhi*), anti-inflammatory, healing, and antiseptic for more amount of tannin in the fruit skin.^{49,50} Now we are in this era of chewing gum where this is becoming a trend, but the fact that the chewing gum is having the sugar which can directly affect the conditioning of the teeth.

Although the saliva generated by chewing will effectively dissolve and remove soluble substrates from the oral cavity, increase the pH of plaque, and promote regeneration of early serious infections, sugar-free chewing gum has no major functional tooth-cleaning effects. After eating, using sugar-free chewing gum as a mechanical salivary stimulant can speed up the removal of food particles and microorganisms, encourage the production of buffers that inhibit plaque acids, and give antibacterial compounds.⁵¹ There is little research to support the suggestions that chewing gum can reduce plaque or gingivitis or both. Other researchers that used various types of branded chewing gums observed higher salivary pH levels as well as lower levels of dental plaque and gingivitis.

Conclusion:-

In this article it is concluded that the pyorrhea is also known as periodontitis or gum disease. pyorrhea is majorly seen in old age people because of the lack of the calcium and vitamin C and also Increasing incidence of pyorrhea in old age people due to improper hygiene. if it is not treated it becomes a big problem or disease. In the recent studies that the gingival bleeding and inflammation is the major sign of pyorrhea in old age people. In this article there is studied increase risk of periodontitis in starting from 13 year of age and It found the risk factor are visual inflammation, histologic changes, bacterial population. In the old age people mostly multiple bacteria is main reason for plaque formation at the gums. So it has to maintain oral hygiene firstly to prevent periodontitis. then it would toothbrush twice a day so that plaque formation does not occur. In the treatment of pyorrhea it has use antimicrobial agent in mouthwash. as a highly effective antimicrobial agent is chlorhexidine is frequently used in the treatment of pyorrhea. Also their is use pomegranate and chamomile in the treatment of pyorrhea, because of they have also act as anti inflammatory and antimicrobial agents. mostly in old age people we have prefer vitamin and calcium supplements for treatment of pyorrhea. According to recent studies pyorrhea is curable disease.

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